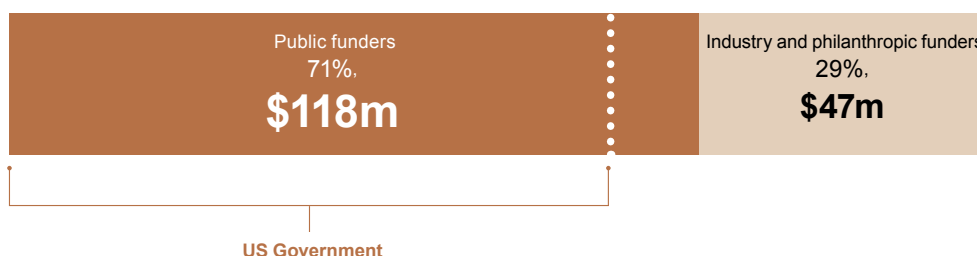


## DISCUSSION

The 2014 West African Ebola outbreak resulted in rapid mobilisation of significant R&D funding, led by the US Government

Not only was the 2014 West African Ebola outbreak the largest ever recorded, but with nearly 30,000 cases and over 11,000 deaths between December 2013 and November 2015, it was larger and more deadly than all previous outbreaks combined. With no vaccine, no anti-viral drugs and no field-suitable diagnostic tests, the global response to the epidemic included significant new funding for R&D to address these gaps.

**Figure 25. Global Ebola R&D funding 2014**



A total of \$165m was invested globally in Ebola R&D in 2014, enough to make Ebola the fifth-highest funded of all the neglected diseases, behind only HIV/AIDS, malaria, TB and diarrhoeal diseases. This substantial 2014 investment was also mobilised over a relatively short timeframe – the first confirmed Ebola diagnosis was made only in late March 2014, and the WHO did not declare a public health emergency until early August.

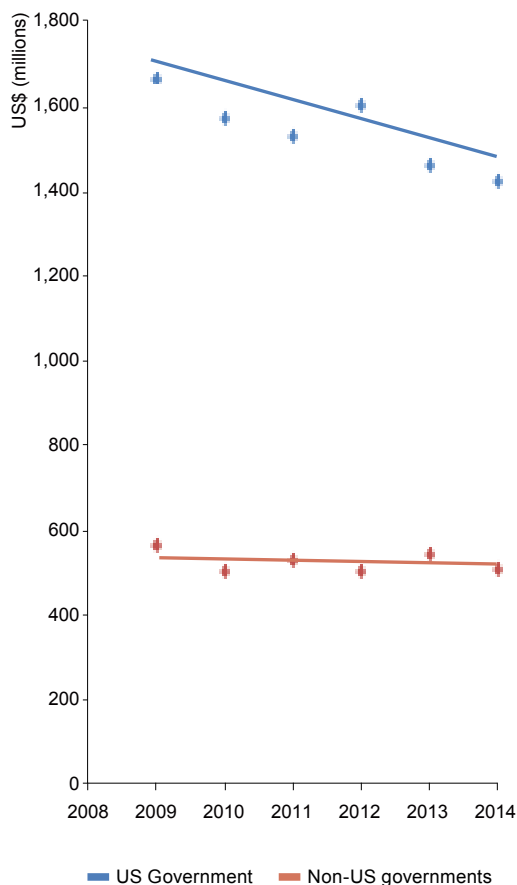
Nearly three-quarters of all funding for Ebola R&D in 2014 came from the public sector (\$118m, 71%), and all of this from HIC governments. The US Government was by far the most significant funder, providing \$101m (86% of total public funding) via three agencies: US NIH (\$64m), US HHS (\$26m) and US DTRA (\$11m). European public funders appeared to be slower to mobilise, contributing \$14m (12% of public funding). This is expected to grow in coming years, with the establishment of funding streams like the Ebola+ program under the EC's Innovative Medicines Initiative (IMI).

The pharmaceutical industry investment of \$35m represented 21% of global Ebola funding, most of which was vaccine R&D investment by MNCs (\$33m, 93% of industry Ebola funding). The philanthropic sector provided a relatively modest contribution of \$12m (7.3% of global Ebola R&D funding).

**In contrast, public funding for other neglected disease R&D approached a historical low**

The mobilisation of significant new funds for Ebola in 2014 masked a more concerning trend. Public sector funding for all other neglected disease R&D in fact fell for the second year in a row (down \$62m, -3.1%). As a result, public funding for non-Ebola neglected disease R&D in 2014 was the lowest recorded since the first year of the G-FINDER survey in 2007.

**Figure 26. The decline of US Government funding for non-Ebola R&D since 2009**



The US Government is the single biggest funder of neglected disease R&D – it contributed 44% of all global non-Ebola funding in 2014 – and has been a major factor behind the ongoing decline in public funding. US Government funding for neglected disease R&D peaked in 2009 driven by economic stimulus spending, but it has been trending downwards ever since, with a single funding spike in 2012 quickly reversed by budget sequester-related cuts in 2013. US Government funding for neglected disease R&D in 2014 (excluding Ebola) was nearly a quarter of a billion dollars lower than in 2009 (down \$221m, -13%).

It's impossible – based on funding data alone – to know whether all of the public sector investment in Ebola R&D in 2014 was truly 'new' funding, or if (and to what extent) this was funding that would otherwise have been invested in other neglected diseases. But the rapid mobilisation of political commitment and financial support for Ebola provides a template of what might be possible for even more deadly neglected diseases – such as diarrhoeal diseases, which kill more than a million children in developing countries every year, but which received just \$93m in public sector R&D funding in 2014, compared to the \$118m that went to Ebola.

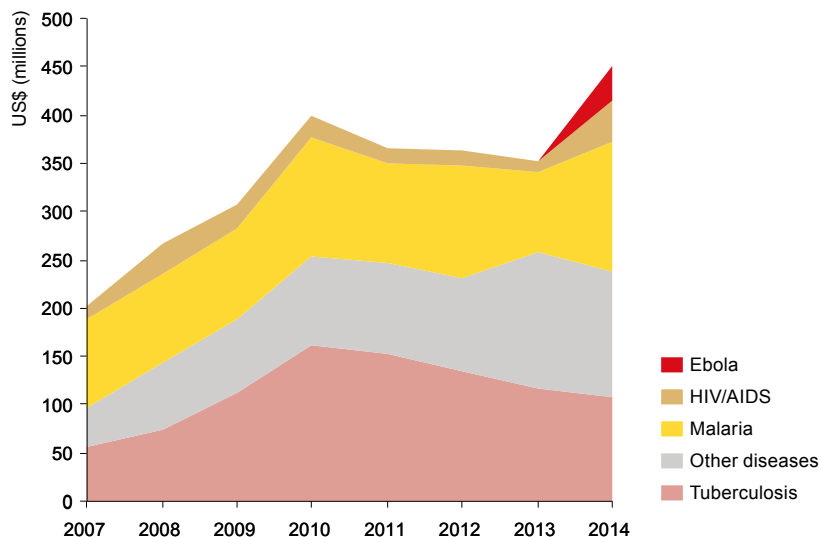
#### Industry funding increased for the first time since 2010... and not only due to Ebola

As we noted in last year's G-FINDER report, industry investment in neglected disease R&D had been declining for several years, reflecting changes in the malaria pipeline and a withdrawal from TB R&D by MNCs. Encouragingly, in 2014 industry reported its largest investment in neglected disease R&D in the history of the G-FINDER survey, with YOY funding increasing by more than a quarter (up \$98m, 28%).

Encouragingly, unlike HIC public funding, the industry increase was not due to Ebola investment, which received \$35m in industry funding in 2014. Even with Ebola excluded, industry funding still rose \$64m (18%) due to increases for malaria and HIV/AIDS. Malaria funding rose by \$51m (62%), due to increases for clinical drug development (up \$45m, more than doubling previous investment) as a result of GSK's investment in Phase III trials of tafenoquine, and vaccine clinical development (up \$13m, 40%). Industry investment in HIV/AIDS also increased by \$33m (a quadrupling of previous investment) due to vaccine clinical development.

However, industry funding for TB continued to decline and 2014 was the first time that TB was not the largest disease area for industry. TB accounted for less than a quarter (22%) of industry funding in 2014, compared to around 40% in 2010 and 2011. In addition, industry funding for TB R&D was nearly a third lower than the 2010 peak, with funding down \$55m (-34%) since then.

**Figure 27. Industry investment in neglected disease R&D 2007-2014**



**Funding to PDPs increased for the second year in a row**

Funding to PDPs had been in consistent decline since 2008, before an increase in funding from European aid agencies – particularly UK DFID – in 2013. In 2014, funding to PDPs grew again (up \$42m, 9.1%), but this time it was an increase in PDP funding from the Gates Foundation (up \$55m, 23%) behind the change.

This was the first increase in Gates Foundation funding to PDPs since 2008, and was driven by big increases for PATH (up \$39m, 58%), largely for next-generation *P. falciparum* malaria vaccines, and DNDi (up \$17m, from \$4.0m in 2013), thanks to new funding for sleeping sickness and lymphatic filariasis. Despite these increases, overall Gates Foundation funding to PDPs was still down by a quarter from its 2008 peak (down \$96m, -25%).

Overall public funding to PDPs in 2014 fell by \$13m (-5.9%), despite a \$17m increase in PDP funding from aid agencies in Australia, the UK and Switzerland.